

CLAIMS

1. Method for categorizing a portion of a video frame, comprising:
using texture information in the portion to determine whether the portion comprises at most a predetermined amount of spatial information; and
if the texture information indicates that the portion comprises at most the predetermined amount of spatial information, then categorizing the portion as nonpredictive.
2. The method of Claim 1, wherein the texture information comprises texture bits.
3. The method of Claim 1, wherein variance values of the portion of the video frame are used to determine the texture information.
4. The method of Claim 3, wherein the predetermined amount of spatial information is an average variance value of at least another video frame.
5. The method of Claim 3, wherein the predetermined amount of spatial information is a scaled average variance value of at least another video frame.
6. Method for categorizing a portion of a video frame, comprising:
using texture information in the portion to determine whether the portion comprises at most a predetermined amount of spatial information;
if the texture information indicates that the portion comprises at most the predetermined amount of spatial information, then categorizing the portion as nonpredictive;
if the texture information indicates that the portion does not comprise at most a predetermined amount of spatial information, then:
performing a motion estimation search;
using motion information determined during the motion estimation search to determine whether the portion comprises at least a predetermined amount of predictive information;

if the motion information indicates that the portion comprises at least the predetermined amount of predictive information, then categorizing the portion as predictive; and

if the motion information indicates that the portion does not comprise at least the predetermined amount of predictive information, then categorizing the portion as nonpredictive.

7. The method of Claim 6, wherein the texture information comprises texture bits.
8. The method of Claim 6, wherein variance values of the portion of the video frame are used to determine the texture information.
9. The method of Claim 8, wherein the predetermined amount of spatial information is an average variance value of at least another video frame.
10. The method of Claim 8, wherein the predetermined amount of spatial information is a scaled average variance value of at least another video frame.
11. The method of Claim 6, wherein motion information comprises pixel differences between the portion of the video frame and at least another portion of at least another video frame.
12. Method for selectively encoding a current macroblock using nonpredictive encoding or predictive encoding, comprising:
 - using texture information of the current macroblock to determine whether to nonpredictively encode the current macroblock; and
 - using motion information of the current macroblock to determine whether to predictively encode the current macroblock.
13. The method of Claim 12, wherein using texture information of the current macroblock to determine whether to nonpredictively encode the current macroblock comprises:
 - determining a variance value of the current macroblock;

comparing the variance value of the current macroblock to a scaled variance value of a macroblock from at least one other video frame; and

if the variance value of the current macroblock is less than the scaled variance value of the macroblock from at least one other video frame, then determining to nonpredictively encode the current macroblock.

14. The method of Claim 13, wherein the scaled variance value of the macroblock from at least one other video frame is a scaled average variance.

15. The method of Claim 12, wherein using motion information of the current macroblock to determine whether to predictively encode the current macroblock comprises:

determining pixel differences between the current macroblock and a macroblock from another video frame; and

if the pixel differences between the current macroblock and the macroblock from another video frame is less than a configurable threshold value, then determining to predictively encode the current macroblock with enhanced accuracy.

16. The method of Claim 12, wherein using motion information of the current macroblock to determine whether to predictively encode the current macroblock comprises:

determining a sum of absolute distance values between the current macroblock and macroblocks from at least one other video frame; and

if the sum of absolute distance values is less than a scaled average minimum sum of absolute distance values of macroblocks from at least one other video frame, then determining predictively encode the current macroblock with enhanced accuracy.

17. The method of Claim 16, wherein the scaled average minimum sum of absolute distance values is configurable.

18. Method for selectively reducing processing cycles of a video codec, comprising:
receiving a configuration signal; and

configuring at least one variable within a complexity control algorithm in accordance with the configuration signal, wherein the complexity control algorithm is for selectively increasing the number of nonpredictively encoded portions of a predictive video frame based upon texture information.

19. The method of Claim 18, wherein the configuration signal conveys image size information.

20. The method of Claim 18, wherein the configuration signal conveys transmission frame rate information.

21. The method of Claim 18, wherein the configuration signal conveys a user command.

22. The method of Claim 18, wherein the configuration signal conveys information regarding available hardware resources.

23. Apparatus for selectively reducing the processing cycles of a video codec, comprising:

- a first complexity control element configured to use texture information of a current macroblock to determine whether to nonpredictively encode the current macroblock; and

- a second complexity control element configured to use motion information of the current macroblock to determine whether to predictively encode the current macroblock.

24. Apparatus for selectively reducing processing cycles of a video codec, comprising:

- a complexity control element configured to receive a configuration signal and to configure at least one variable within a complexity control algorithm in accordance with the configuration signal, wherein the complexity control algorithm is for selectively increasing the number of nonpredictively encoded portions of a predictive video frame based upon texture information.

25. Apparatus for categorizing a portion of a video frame, comprising:
at least one memory element; and
at least one processing element configured to execute a set of instructions stored in the at least one memory element, the set of instructions for:
using texture information in the portion to determine whether the portion comprises at most a predetermined amount of spatial information;
if the texture information indicates that the portion comprises at most the predetermined amount of spatial information, then categorizing the portion as nonpredictive;
if the texture information indicates that the portion does not comprise at most a predetermined amount of spatial information, then:
performing a motion estimation search;
using motion information determined during the motion estimation search to determine whether the portion comprises at least a predetermined amount of predictive information;
if the motion information indicates that the portion comprises at least the predetermined amount of predictive information, then categorizing the portion as predictive; and
if the motion information indicates that the portion does not comprise at least the predetermined amount of predictive information, then categorizing the portion as nonpredictive.
26. Apparatus for selectively encoding a current macroblock using nonpredictive encoding or predictive encoding, comprising:
means for using texture information of the current macroblock to determine whether to nonpredictively encode the current macroblock; and
means for using motion information of the current macroblock to determine whether to predictively encode the current macroblock.
27. Apparatus for selectively reducing processing cycles of a video codec, comprising:
means for receiving a configuration signal; and

means for configuring at least one variable within a complexity control algorithm in accordance with the configuration signal, wherein the complexity control algorithm is for selectively increasing the number of nonpredictively encoded portions of a predictive video frame based upon texture information.

28. Apparatus for categorizing a portion of a video frame, comprising means for using texture information in the portion to determine whether the portion comprises at most a predetermined amount of spatial information and categorizing the portion as nonpredictive if the texture information indicates that the portion comprises at most the predetermined amount of spatial information.